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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/713,608 | 11/14/2003 | Vincent M. Kane | 18087 | 2527 |
| 7590 | 02/07/2006 | | EXAMINER | |
| Robert J. Kapalka Tyco Technology Resources Suite 140 4550 New Linden Hill Road Wilmington, DE 19808 | | | CARPIO, IVAN HERNAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2841 | |
| DATE MAILED: 02/07/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|----------------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/713,608 | KANE, VINCENT M. <i>(PNC)</i> | |
| | Examiner | Art Unit | |
| | Ivan H. Carpio | 2841 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-26 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 14 November 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2-19-04, 5-10-04.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Examiner's Note

Examiner believes that a typo has been made in claim 23 which reads, "said connector header is provided with two elongate openings...", from the specification and reference claim 12 the examiner believes it should read "said casing is provided with two elongated openings...". Claim 23 has been examined with this correction in mind.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9,14-20 and 25-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Pratt (US Patent 6652292).

With respect to claim 1, Pratt teaches an electronic module, comprising: a casing (Fig.1, elements 16 or 14) defining a cavity therein, said casing having at least one opening (Fig. 3, element 20) there through for communication with said cavity; a substrate (Fig. 4, element 50) received in said cavity, said substrate having a plurality of through holes (Fig. 7, elements 56) positioned adjacent to and overlapping with said

opening; a connector header (Fig.1, element 12) positioned over said casing opening, said connector having a plurality of electrical terminals (Fig. 1, element 40), with first portions positioned exterior of said cavity, and second portions extending into said cavity and into said through holes of said substrate forming an electrical and mechanical connection therewith; and wherein said mechanical connection at least partially retains said connector header and substrate to said casing.

With respect to claim 2 and with all the limitations of claim 1, Pratt teaches that the casing is defined by a planar wall and upstanding peripheral walls (Fig. 3), said opening extending through said planar wall, and said peripheral walls forming said cavity.

With respect to claim 3 and with all the limitations of claim 2, Kamiya teaches that said terminal second portions (Fig. 5, element 40) are compliant pin sections.

With respect to claim 4 and with all the limitations of claim 3, Kamiya teaches that the substrate is a printed circuit board (Fig. 7), and said through holes are plated and interconnected to traces on said circuit board.

With respect to claim 5 and with all the limitations of claim 4, Kamiya teaches electronic components (column 4, lines 26-42) positioned within said cavity and mounted to said printed circuit board, interconnected to said traces (fig. 6).

With respect to claim 6 and with all the limitations of claim 1, Kamiya teaches that the casing further comprises an upstanding sealing wall (Fig. 3, the sides of element 22) in a surrounding relation to said opening.

With respect to claim 7 and with all the limitations of claim 6, Kamiya teaches that the connector header has a sealing groove (Fig.5, the groove between elements 38 and 36) with a complementary geometry as said upstanding sealing wall and is received therein.

With respect to claim 8 and with all the limitations of claim 7, Kamiya teaches a seal member (Fig. 5, element 36) positioned within said sealing groove and in sealing contact with said sealing wall.

With respect to claim 9 and with all the limitations of claim 1, Kamiya teaches that the header has a mounting surface (Fig. 5, element 38) which extends at least partially into said opening.

With respect to claim 14 Kamiya teaches a method of making an electronic module, comprising the steps of: providing a casing (Fig. 1, elements 16 or 14) defining a cavity therein, said casing having an opening (Fig. 3, element 20) therethrough for communication with said cavity; positioning a substrate (Fig. 4, element 50) in said cavity, said substrate having a plurality of throughholes (Fig. 7, elements 56) positioned adjacent to and overlapping with said opening; positioning a connector header (Fig. 1, element 12) over said casing opening in a mating direction, said connector having a plurality of electrical terminals (Fig. 1, element 40), with first portions positioned exterior of said cavity, and second portions extending into said cavity and into said throughholes of said substrate forming an electrical and mechanical connection therewith; providing a sealing member (Fig. 5, element 36) between said casing and

said header which is compressed in the mating direction, and retaining said connector header against said casing.

With respect to claim 15 and with all the limitations of claim 14, Kamiya teaches that a mechanical connection between (Fig. 2) said header and said substrate retains said connector header and substrate to said casing.

With respect to claim 16 and with all the limitations of claim 16, Kamiya teaches that the terminal second portions (Fig. 2) are provided as compliant pin sections.

With respect to claim 17 and with all the limitations of claim 14, Kamiya teaches that said casing is provided with an upstanding sealing wall (Fig. 3, the sides of element 22) in a surrounding relation to said opening.

With respect to claim 18 and with all the limitations of claim 17, Kamiya teaches that a connector header is provided with a sealing groove (Fig.5, the groove between elements 38 and 36) with a complementary geometry as said upstanding sealing wall and is received therein.

With respect to claim 19 and with all the limitations of claim 18, Kamiya teaches that the seal member (Fig. 5, element 36) is positioned within said sealing groove and in sealing contact with said sealing wall.

With respect to claim 20 and with all the limitations of claim 14, Kamiya teaches connector header is provided with a mounting surface (Fig. 5, element 38), which extends at least partially into said opening and is placed in contact with said substrate.

With respect to claim 25 and with all the limitations of claim 14, Kamiya teaches that said connector header, casing and substrate are attached to each other simultaneously (fig. 1).

With respect to claim 26 and with all the limitations of claim 25, Kamiya teaches that the connector header, casing and substrate are attached to each other (fig. 3) by a single movement towards each other along said mating axis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 10-13 and 21-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya in view of Kameyama (US 6616480).

With respect to claims 10 and 21 with all the limitations of claims 9 and 20 respectively, Kamiya teaches all of the limitations except that said header mounting surface is adhesively fixed to said substrate. Kameyama discloses two surfaces on header connector being attached by adhesive (column 33, lines 60-67) means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fix the header and substrate, taught by Kamiya, together using the adhesive means, taught by Kameyama, for the purpose of attaching and securing the header to

the substrate thus connecting mechanically and electrically the electric terminals to the substrate.

With respect to claims 11 and 22 with all the limitations of claims 9 and 20 respectively, Kamiya teaches all of the limitations except that the header mounting surface is adhesively fixed to said casing. Kameyama discloses a header mounting surface being adhesively (fig. 5, column 22, lines 60-67) fixed to a casing. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the header mounting surface to the casing, as taught by Kamiya, using adhesive mean, as taught by Kameyama, for the purpose of mechanically attaching the header to the casing while providing sealing effects protecting the internal components.

With respect to claims 12 and 23 with all the limitations of claims 11 and 22 respectively, Kamiya teaches that said casing has two elongate openings (Fig. 3, element s 20), with an intermediate strap portion (Fig. 3, the strap portion between any two openings 20 and including the inner wall), said connector header having raised portions (fig. 3, element 34) adjacent said compliant pin portions, received in said openings, and a mounting portion intermediate said raised portions (Fig. 3, element 22).

With respect to claims 13 and 24 with all the limitations of claims 11 and 23 respectively, Kamiya teaches all of the limitations except that the mounting surface is adhesively fixed to the strap portion. Kameyama discloses a header mounting surface being adhesively (fig. 5, column 22, lines 60-67) fixed to a casing. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the mounting surface and strap portion, taught by Kamiya, using adhesive means, as taught by

Kameyama, because doing so mechanically attaches the header to the casing while providing sealing effects protecting the internal components.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ivan H. Carpio whose telephone number is 571-272-8396. The examiner can normally be reached on M-R 6:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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